

Statistics GCSE

Paper 2

2025

Edexcel Foundation

Variant 2

1ST0/2F





# Mark scheme

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Question	Mark Scheme	Mark
1 (a)	<p>[2 marks] All frequencies are correct (8, 6, 3, 3)</p> <p><b>OR</b></p> <p>[1 mark] At least one frequency or tally correct</p>	2

**Question 1 (a) model answer**

Coffee	Tally	Frequency
Espresso		8
Latte		6
Cappuccino		3
Mocha		3

Question	Mark Scheme	Mark
1 (b)	[1 mark] 20	1

Question	Mark Scheme	Mark
1 (c)	[1 mark] More colleagues selected Espresso than Mocha.	1

Question	Mark Scheme	Mark
1 (d)	[1 mark] for one of the following: + Data is not numbers/qualitative + Not possible to find the median or mean	1

### Question 1 (d) model answer

The data is qualitative.

Question	Mark Scheme	Mark
1 (e)	[1 mark] for one of the following: + easier to read/see differences in/analyse data + more organised	1

### Question 1 (e) model answer

The data is more organised.

Question	Mark Scheme	Mark
2 (a)	[1 mark] Female [1 mark] 57+ years old	2

Question	Mark Scheme	Mark
2 (b)	[1 mark] statement that describes upward trend between attending fitness classes and age (accept positive correlation).	1

### Question 2 (b) model answer

The proportion of people attending fitness classes increases with age.

Question	Mark Scheme	Mark
2 (c)	[1 mark] valid comparison using amounts, <b>OR</b> words such as 'higher' or 'more'	1

### Question 2 (c) model answer

The percentage of females who did yoga or pilates was 19% but the percentage for males was lower at 11%

Question	Mark Scheme	Mark
3 (a)	[1 mark] 6.8	1

Question	Mark Scheme	Mark
3 (b)	[1 mark] 50-59	1

Question	Mark Scheme	Mark
3 (c)	[1 mark] 10-19	1

Question	Mark Scheme	Mark
3 (d)	[1 mark] They are both the same.	1

Question	Mark Scheme	Mark
3 (e)	[1 mark] They have been rounded.	1

Question	Mark Scheme	Mark
4 (a)	[1 mark] any statement that implies collecting more data/having a larger sample	1

#### Question 4 (a) model answer

Record data over more days.

Question	Mark Scheme	Mark
4 (b)	<p>[1 mark] higher proportion of £105 tickets sold at new location.</p> <p>[1 mark] an explanation why a higher proportion of people spent more. For example:</p> <ul style="list-style-type: none"> <li>+ the new city may be more affluent</li> <li>+ people may have been more keen to spend more on the opening weekend</li> <li>+ this data from both of the theatres was not gathered at the same time.</li> </ul>	2

#### Question 4 (b) model answer

There was a higher proportion of £105 tickets at the new location. This could have been because at an opening weekend people may be happier to spend more on a ticket.

Question	Mark Scheme	Mark
5 (a)	<p>[2 marks] chicken sandwiches and iced tea: 50, tuna sandwiches total: 81 <b>AND</b> orange juice total: 78</p> <p><b>OR</b></p> <p>[1 mark] one value correct</p>	2

#### Question 5 (a) model answer

	iced tea	orange juice	Total
chicken	50	46	96
tuna	49	32	81
Total	99	78	177

Question	Mark Scheme	Mark
5 (b)	Part i [1 mark] $\frac{96}{177}$ oe  Part ii [1 mark] $\frac{49}{177}$ oe  Part iii [2 marks] $\frac{78}{177}$ oe <b>OR</b> [1 mark] 78 or 177 - 99 or $1 - \frac{99}{177}$	4

Question	Mark Scheme	Mark
5 (c)	[1 mark] yes / order more iced tea than orange juice  [1 mark] + sold more iced tea than orange juice + sold 99 iced tea and 78 orange juice + iced tea was more popular	2

### Question 5 (c) model answer

Yes, Aisha should buy more bottles of iced tea than orange juice because she sold more iced tea than orange juice.

Question	Mark Scheme	Mark
6 (a)	<p>Two reasons from:</p> <ul style="list-style-type: none"> <li>+ easier</li> <li>+ cheaper</li> <li>+ quicker</li> <li>+ less data to handle</li> </ul> <p>Allow the converse, if census is mentioned.</p>	2

### Question 6 (a) model answer

A sample is cheaper.

A sample is quicker.

Question	Mark Scheme	Mark
6 (b)	[1 mark] Identification of what a sampling frame is.	1

### Question 6 (b) model answer

A list of all the members in the population.

Question	Mark Scheme	Mark
6 (c)	[1 mark] Identification of a problem of the sampling frame.	1

### Question 6 (c) model answer

Only those registered to vote would be included.

Question	Mark Scheme	Mark
6 (d)	<p>[1 mark] for each from the following (maximum 2 marks):</p> <ul style="list-style-type: none"> <li>+ A pilot survey will help identify problems.</li> <li>+ A pilot survey will give an idea of what the results may be.</li> <li>+ A pilot survey will test questions are understood/clear.</li> <li>+ A pilot survey will give an idea of response rate.</li> <li>+ A pilot survey will test questions are working as intended.</li> <li>+ A pilot survey will check questions are inoffensive.</li> </ul>	2

### Question 6 (d) model answer

A pilot survey will test questions are understood.

A pilot survey will give an idea of response rate.

Question	Mark Scheme	Mark
7 (a)	[1 mark] for a correct description	1

### Question 7 (a) model answer

Individuals are selected completely at random, with every member of the population has the same probability of being selected

Question	Mark Scheme	Mark
7 (b)	<p>[1 mark] Correct outlier of 80000</p> <p>[1 mark] Correct explanation</p>	2

### Question 7 (b) model answer

The value is much higher than the rest of the data.

Question	Mark Scheme	Mark
7 (c)	[1 mark] The mean is lower. [1 mark] Correct explanation.	2

#### Question 7 (c) model answer

The mean is less. This is because the value that David removed is higher than all the other values.

Question	Mark Scheme	Mark
7 (d)	[1 mark] for each correct description (maximum two)	2

#### Question 7 (d) model answer

Small sample size.

Teachers may not want to give their salary.

Question	Mark Scheme	Mark
8 (a)	[1 mark] Correct reason.	1

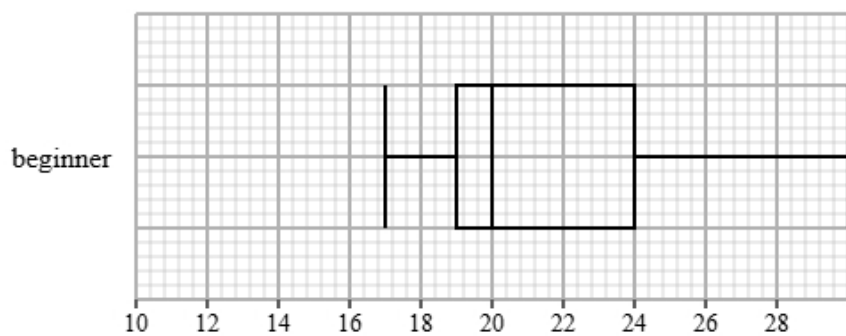
#### Question 8 (a) model answer

'Met aerobic guidelines' has the largest sector.

Question	Mark Scheme	Mark
8 (b)	<p>[1 mark] Finding angle of 'Met aerobic guidelines' is <math>122^\circ</math></p> $\frac{230}{360} \times 56$ <p>[1 mark] 36 million</p>	2

Question	Mark Scheme	Mark
9 (a)	<p>[1 mark] A box with two whiskers drawn with at least 3 correct values</p> <p>[1 mark] Fully correct</p>	2

### Question 9 (a) model answer



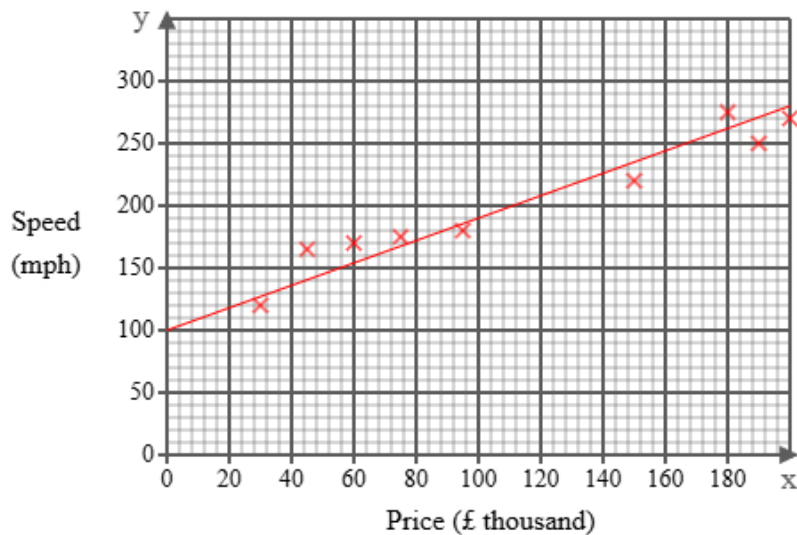
Question	Mark Scheme	Mark
9 (b)	[1 mark] Correct comparison of the medians [1 mark] Correct comparison of the IQR/range [1 mark] Correct comparison of the skews [1 mark] Correct contextual interpretation comparing medians or IQR/ranges or skew	4

### Question 9 (b) model answer

The median completion times for pro runners is lower than beginner runners. The IQR for the completion times of the pro runners is lower than beginner runners. The skew for the completion times of the pro runners is symmetrical and the skew for the beginner runners is positive. The pro runners are on average faster than the beginner runners.

Question	Mark Scheme	Mark
10 (a)	[1 mark] correct line of best fit drawn.	1

### Question 10 (a) model answer



Question	Mark Scheme	Mark
10 (b)	[1 mark] positive [1 mark] strong [1 mark] As the price increases the top speed increases.	3

Question	Mark Scheme	Mark
10 (c)	[1 mark] for not appropriate [1 mark] for a reason	2

#### Question 10 (c) model answer

This is not appropriate because the point is outside the range of the data.

Question	Mark Scheme	Mark
11 (a)	[1 mark] for each reason (maximum 2 marks)	2

#### Question 11 (a) model answer

Grouped data makes it easier to process large amounts of data.

Grouped data is easier to read.

Question	Mark Scheme	Mark
11 (b)	[2 marks] for a conclusion and two reasons. <i>or</i> [1 mark] for a reason and conclusion, or two reasons with no conclusion.	2

### Question 11 (b) model answer

In Table A, there are no dogs in three of the groups, so these groups are not needed. In Table B, each group has a smaller class width, showing more detail. Liam's claim is justified.

Question	Mark Scheme	Mark
11 (c)	[1 mark] for $\sum fw = 10790$ [1 mark] for $\frac{\sum fw}{180} = \frac{10790}{180} = (59.944\dots)$ [1 mark] for 59.9	3

Question	Mark Scheme	Mark
12 (a)	[1 mark] for a correct description which must include both events	1

### Question 12 (a) model answer

The number of students who play a musical instrument **and** are part of the school's debate team

Question	Mark Scheme	Mark
12 (b)	<p>[1 mark] for <math>P(B) = \frac{23}{50}</math></p> <p>[1 mark] for use of conditional probability to find <math>P(B A)</math></p> <p>[1 mark] for <math>P(B A) = \frac{1}{4}</math></p> <p><b>Explanation</b></p> <p>[1 mark] for <math>\frac{23}{50} \neq \frac{1}{4}</math></p> <p>[1 mark] for correct conclusion based on their answers</p>	5

### Question 12 (b) model answer

$$\begin{aligned} \text{amount in B} &= 5 + 18 \\ &= 23 \end{aligned}$$

$$\text{total amount} = 50$$

$$P(B) = \frac{\text{amount in B}}{\text{total amount}}$$

$$P(B) = \frac{23}{50}$$

$$P(B | A) = \frac{P(A \text{ and } B)}{P(A)}$$

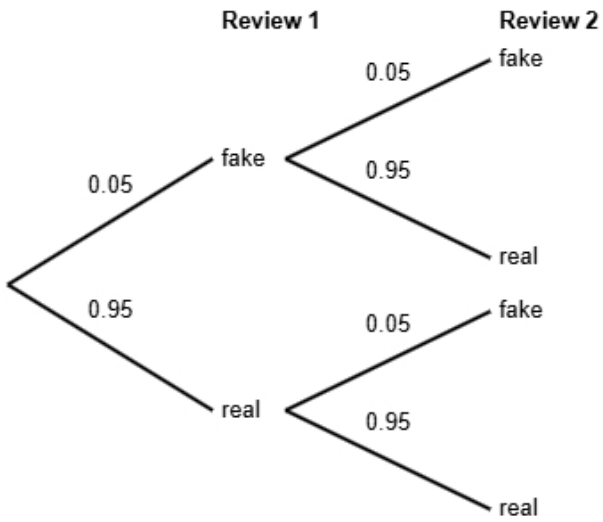
$$P(B | A) = \frac{5}{\frac{50}{20}}$$

$$P(B | A) = \frac{1}{4}$$

$\frac{23}{50} \neq \frac{1}{4}$  so A and B are not independent

Question	Mark Scheme	Mark
13 (a)	[1 mark] 0.95 in correct position for Review 1. [1 mark] 0.05, 0.95, 0.05 and 0.95 in correct positions for Review 2.	2

**Question 13 (a) model answer**



Question	Mark Scheme	Mark
13 (b)	[1 mark] 0.9025	2

Question	Mark Scheme	Mark
13 (c)	[1 mark] for one correct product using their '0.95' or subtracting a not-wanted product from 1 [1 mark] for 0.095 or 9.5% [1 mark] for 'correct' fit probability and conclusion based on their probability	3

### Question 13 (c) model answer

$$\begin{aligned}
 P(\text{fake AND real}) &= 0.05 \times 0.95 \\
 &= 0.0475 \\
 P(\text{exactly one reviews is fake}) &= 0.0475 \times 2 \\
 &= 0.095 \\
 0.095 &= 9.5\% \\
 9.5\% &< 10\%
 \end{aligned}$$

The probability that exactly one reviews is fake is less than 10%, so Emma is correct.

Question	Mark Scheme	Mark
14 (a)	[1 mark] for correct comment on the type of data, such as discrete, whole numbers, integers, etc.	1

### Question 14 (a) model answer

Because the number of students who passed a daily maths quiz is discrete.

Question	Mark Scheme	Mark
14 (b)	<b>Part i</b> [1 mark] 0 <b>Part ii</b> [1 mark] Subtracts 55 from 60. [1 mark] 5	3

<b>Question</b>	<b>Mark Scheme</b>	<b>Mark</b>
<b>14 (c)</b>	[1 mark] 4	<b>1</b>

<b>Question</b>	<b>Mark Scheme</b>	<b>Mark</b>
<b>14 (d)</b>	[1 mark] for a correct reason	<b>1</b>

### **Question 14 (d) model answer**

The range is 6, so the IQR must be less than 6.